



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

April 5, 2018

Olav Messerschmidt
Registration Agent for Terramera, Inc.
c/o OMC Ag Consulting
828 TANGLEWOOD LANE
EAST LANSING, MI 48823

Subject: PRIA (Pesticide Registration Improvement Act) Labeling and Formulation
Amendment – Acceptable Formulation Revision to Change the Active Ingredient
Marker, Addition of Inert Ingredient, and Minor Label Revisions.
Product Name: Plasma Neem Oil EC
EPA Registration Number: 88760-5
Application Date: 10/30/2017
OPP Decision Number: 535724

Dear Dr. Messerschmidt:

The amended labeling and Confidential Statement of Formula (CSF) referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, are acceptable.

This approval does not affect any terms or conditions that were previously imposed on this registration. You continue to be subject to existing terms or conditions on your registration and any deadlines connected with them.

Please note that the record for this product currently contains the following acceptable CSF:

- Basic CSF dated 03/27/2018

Any CSFs other than that listed above are superseded/no longer valid.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one (1) copy of the final printed labeling before you release this product for shipment with the new labeling. In accordance with 40 CFR § 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR § 152.3.

Should you wish to add/retain a reference to your company's website on your label, then please be aware that the website becomes labeling under FIFRA and is subject to review by the U.S. Environmental Protection Agency (EPA). If the website is false or misleading, the product will be considered to be misbranded and sale or distribution of the product is unlawful under FIFRA section 12(a)(1)(E). 40 CFR § 156.10(a)(5) lists examples of statements the EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the EPA find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA-approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance Assurance.

Your release for shipment of this product constitutes acceptance of these terms. If these terms are not complied with, this registration will be subject to cancellation in accordance with FIFRA section 6.

If you have any questions, please contact Alex Horansky by phone at (703) 347-0128 or via email at Horansky.alex@epa.gov.

Sincerely,

A handwritten signature in blue ink that reads "Andrew C. Bryceland". The signature is fluid and cursive, with the first name being the most prominent.

Andrew Bryceland, Team Leader
Biochemical Pesticides Branch
Biopesticides and Pollution
Prevention Division (7511P)
Office of Pesticide Programs

Enclosure

[Note: Texts in [] are optional language.]

Plasma Neem® Oil EC (EPA Reg. No. 88760-5)

MASTER LABEL

Sublabel A is for Agricultural Use

Sublabel B is for Residential Use

Plasma Neem® Oil EC

**Biological Insecticide [/Fungicide] [/Nematicide]
[/Miticide]**

[Alternate Brand Name: TerraNeem® EC]

**[Anti-Feedant, Insect Repellent, Insect Growth Regulator,
Fungal Growth Inhibition]**

For Use on Listed Crops

including vegetables, fruits, citrus, nuts, [and] ornamental plants, and other plants

*For foliar and soil treatment to control listed insect pests, mites, fungal disease
and nematodes*

Active Ingredient:

Cold Pressed Neem Oil..... 84.9%

Other Ingredients..... 15.1%

Total 100.0%

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

READ ALL DIRECTIONS BEFORE USING THIS PRODUCT

Shake Well Before Use

NET CONTENTS: 8 FL. OZ. to 275 GALLONS

EPA Reg. No. 88760-5
EPA Est. No. 49292-WA-001

Batch No.

Manufactured by:
Terramera, Inc.
6920 Salashan Pkwy D-109
Ferndale, WA 98248

ACCEPTED

04/05/2018

Under the Federal Insecticide, Fungicide
and Rodenticide Act as amended, for the
pesticide registered under
EPA Reg. No. 88760-5

[Note: Texts in [] are optional language.]

Plasma Neem® Oil EC (EPA Reg. No. 88760-5)

Sublabel A: Agricultural Use

Plasma Neem® Oil EC

[Alternate Brand Name: TerraNeem® EC]

**Biological Insecticide [/Fungicide] [/Nematicide] [/Miticide]
[Anti-Feedant, Insect Repellent, Insect Growth Regulator,
Fungal Growth Inhibition]**

For Use on Listed Crops

*including vegetables, fruits, citrus, nuts, [and] ornamental plants, and other plants
For foliar and soil control of listed insect pests, mites, fungal disease and nematodes*



Active Ingredient:

Cold Pressed Neem Oil..... 84.9%

Other Ingredients..... 15.1%

Total 100.0%

[This product contains 6.52 lbs. of cold pressed neem oil per gallon.]

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

READ ALL DIRECTIONS BEFORE USING THIS PRODUCT

Shake Well Before Use

[See label booklet for additional precautionary statements, directions for use, storage and disposal statements, and warranty.]

NET CONTENTS: 8 FL. OZ. to 275 GALLONS

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PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks

Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions are available, wash with detergent and hot water. Keep and store PPE separately from other laundry.

IMPORTANT: When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for "applicators and other handlers" and have such PPE immediately available for use in an emergency, such as a spill or equipment break-down.

ENVIRONMENTAL HAZARDS

For terrestrial uses: Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment washwater or rinsate.

USER SAFETY RECOMMENDATIONS

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if contaminated with pesticide. Wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS, AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during product application. For any requirements specific to your state or tribe, consult the state or tribal agency responsible for pesticide regulation.

[Note: Texts in [] are optional language.]

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard (WPS).

Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- Long-sleeved shirt and long pants
- Shoes plus socks

NON-AGRICULTURAL USE REQUIREMENTS

These requirements apply to uses of this product that are NOT within the scope of the WPS for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses. For other uses, including golf courses and other non-agricultural uses, do not enter treated areas without protective clothing until sprays have dried

PRODUCT MODE OF ACTION

Plasma Neem® Oil EC controls listed pests by ingestion and by contact. The modes of action on insects are repellence, anti-feeding action and interference with the molting process. **Plasma Neem® Oil EC** controls listed diseases by inhibiting mycelial growth.

GENERAL INFORMATION

Read all directions before using this product.

To control listed pests, apply **Plasma Neem® Oil EC** as directed to any food or non-food crop up to and including the day of harvest.

Insecticide and Miticide Foliar Applications: For most pest and crop conditions, use a concentration of 0.5-1% **Plasma Neem Oil EC**. For heavier infestations, use a 1.5% concentration of **Plasma Neem Oil EC**. Use a maximum rate of 5 pints **Plasma Neem® Oil EC**/acre.

[Note: Texts in [] are optional language.]

Fungicide Foliar Application: Use a concentration of 1.0-1.5% Plasma Neem Oil EC up to a maximum rate of 5 quarts **Plasma Neem® Oil EC**/acre.

Nematicide and Other Soil Applications: Use a maximum rate of 6 quarts **Plasma Neem® Oil EC** per acre in 1~2% dilution.

Refer to the Mixing and Application Instructions for mixing and rate instructions and to Use Site Section for a complete listing of crops.

MIXING INSTRUCTIONS

Plasma Neem® Oil EC is an emulsifiable concentrate and requires only water for the appropriate use dilution. Additional surfactant is not required. Shake the container well before use. Neem oil can solidify at temperatures below 59°F. If solidified, thaw the product by setting out in temperatures over 80°F and agitating well before mixing with water. For optimal emulsion, do not use cold water (less than 45°F).

Add **Plasma Neem® Oil EC** to a mixing tank half-filled with water of 45°F or warmer and agitate. Then add additional water to final volume with continuous agitation. If water temperature is below 45°F, achieve a good emulsion by premixing **Plasma Neem® Oil EC** at 1:1 ratio with tepid water before filling to final volume.

When mixing with other products such as wettable powder insecticides or fungicides, add those products first when the tank is approximately 1/3 full. Agitate well while mixing to achieve complete emulsification. Do not use if a uniform, cloudy emulsion is not formed.

Always use this product promptly after mixing with water. To prevent separation of the emulsion, agitate continuously during application. Non-uniform dilution can cause crop injury or result in lowered effectiveness. For tank mixtures, add components to the tank containing the **Plasma Neem® Oil EC** spray mixture and agitate thoroughly. Do not let tank mixture sit for an extended period of time. If tank mixture is allowed to sit, agitate thoroughly again prior to and during application. Adjusting the spray mixture pH between 5.5 and 7.0 will provide optimal performance.

TANK MIX AND COMPATIBILITY: **Plasma Neem® Oil EC** is best applied independently but has been found to be compatible when tank mixed with liquid fertilizer such as fish emulsion and adjuvants such as karanja oil, cottonseed oil, sesame oil and castor oil. To determine the physical compatibility of **Plasma Neem® Oil EC** with other products, test as described below before mixing.

Jar Compatibility Test: Using a quart jar, add the proportionate amounts of products to be tank mixed to 1 quart of water in the following order. Add wettable powders and water-dispersible granular products first, then add liquid flowables, then add emulsifiable concentrates and solutions last. After thoroughly mixing by agitation, let stand for at least 5 minutes. If the combination remains mixed or can be remixed readily, it is physically compatible. Once compatibility has been proven, use the same procedure for adding required ingredients to the spray tank. All possible tank mixes on all crops have not been tested. Growers must test tank mix

[Note: Texts in [] are optional language.]

combinations for phytotoxicity on a sample of plants prior to use. Do not use mixtures of incompatible products as it may cause phytotoxicity or result in lowered effectiveness.

Always read and follow the directions for use, precautions and limitations for use on all product labels used in combination. Applications must follow the precautions and limitations of the most restrictive product label in the mixture. Do not exceed the dosage rates of any product. Check compatibility by using the correct proportion of the products in a small test container.

DO NOT apply sulfur or sulfur containing products within 14 days of a Plasma Neem® Oil EC application.

PHYTOTOXICITY: When used according to label instructions, **Plasma Neem® Oil EC** has been evaluated for phytotoxicity on a wide range of crops and ornamentals. To avoid plant damage, test this product on a small portion of the area to be treated for phytotoxicity before treating the entire area. Apply foliar spray in conditions that favor fast drying.

All possible mixtures of pesticide sprays, other fertilizers, surfactants, and adjuvants, have not been tested. Therefore, user must test spray mixtures to ensure no phytotoxicity before applying to wide areas.

Application Equipment

Apply Plasma Neem® Oil EC using any powered or manual pesticide application equipment including high volume, low volume, ultra-low volume, electrostatic, air blast and fogging equipment. . When used as a foliar application, ensure complete coverage of the plant surfaces, but avoid pooling or run off. Follow the original equipment manufacturer's instructions. Avoid spraying under conditions of high humidity and high temperature (>90°F).

Thoroughly clean spray equipment used to apply **Plasma Neem® Oil EC** before use. Tank mixed combinations of **Plasma Neem® Oil EC** may not be compatible with oil-based formulations. To determine compatibility, conduct Jar Compatibility Test.

**Dilution Table for Low Volume Applications
(10 to 30 gallons per acre)**

Gallons of Water	Plasma Neem® Oil EC	Dilution
10	24 fl. oz.	1.88%
15	1 quart	1.66%
20	1 quart	1.25%
25	1 quart	1.0%
30	1 quart	0.83%

[Note: Texts in [] are optional language.]

**Dilution Table for High Volume Applications
(25 to 200 gallons per acre)**

Gals. of Water	Gallons of Plasma Neem Oil® EC for 0.5% Solution	Gallons of Plasma Neem Oil® EC for 1.0% Solution	Gallons of Plasma Neem Oil® EC for 1.5% Solution	Gallons of Plasma Neem Oil® EC for 2.0% Solution
25	0.125 (16 fl oz)	0.25 (32 fl oz)	0.375 (48 fl oz)	0.5 (64 fl oz)
50	0.25 (32 fl oz)	0.5 (64 fl oz)	0.75 (96 fl oz)	1.0
75	0.375 (48 fl oz)	0.75 (96 fl oz)	1.125	1.5
100	0.5 (64 fl oz)	1.0	1.5	2.0
125	0.625 (80 fl oz)	1.25	1.875	2.5
150	0.75 (96 fl oz)	1.5	2.25	3.0
175	0.875 (112 fl oz)	1.75	2.625	3.5
200	1.0	2.0	3.0	4.0

APPLICATION INSTRUCTIONS

Apply Plasma Neem® Oil EC as a foliar spray or as soil treatment (soil drench, in-furrow, drip-applied) to control listed insect pests, nematodes and diseases.

Apply as a soil treatment to control listed soil-borne pests and larvae of pests (see Chemigation Instructions).

INSECTICIDE/MITICIDE FOLIAR USE

Apply **Plasma Neem® Oil EC** in sufficient amounts of water and adequate spray pressure to achieve thorough coverage of plant surfaces. **Plasma Neem® Oil EC** is most effective when applied before or around the onset of insects, mites or their eggs (see Pest List) or as soon as they are noticed. Apply at a concentration of 0.5-1.5% for a maximum rate of 5 pints **Plasma Neem® Oil EC** per acre. Ensure that both the top and bottom of leaves are wetted. For optimum results, repeat the applications at intervals of 7-10 days. Use higher rates and increase spray frequency when pest pressure is high.

Spray early in the morning or in the evening for best results. Repeat application if it rains within four hours of spraying.

[Note: Texts in [] are optional language.]

NEMATICIDE AND OTHER SOIL USE

Apply as a preventative treatment (see Pest List for Soil Pests) or control treatment after nematodes and other listed pests have been detected. When used as a soil application (soil drench, in-furrow, drip-applied), apply at 1.0-2.0% for a maximum rate of 6 quarts **Plasma Neem® Oil EC** per acre to deliver complete and thorough coverage. When applied as a soil drench, avoid excessive run off. For, repeat the applications as necessary.

Root-dip Nematicide Use on Strawberries

For bare-root dip applications on strawberries use a concentration of 2% (e.g. 2 gallons of Plasma Neem® Oil EC in 100 gallons of water). If bare-root nursery plants are in cold storage, allow them to thaw to ambient temperature – approximately 20°C (70°F). Submerge the entire plant to be treated in **Plasma Neem® Oil EC** emulsion. Leave the plant completely submerged in for 15-30 minutes. Remove the plants from the treatment solution, shake off excess liquid, and drain for 5-15 min. Plant after treatment, or package the plants in suitable containers and cold store between -2°C and 5 °C (28-48 °F) during shipping and until planting.

FUNGICIDE FOLIAR USE

Apply **Plasma Neem® Oil EC** in sufficient amount of water and with adequate spray pressure to achieve thorough coverage of plant surfaces. **Plasma Neem® Oil EC** is most effective when applied before the onset of disease development. Apply a maximum rate of 5 quarts **Plasma Neem® Oil EC** per acre at a concentration of 1.0-1.5%. Do not apply with any sulfur or sulfur containing products within 14 days of a **Plasma Neem® Oil EC** application.

Crop	Disease	Concentration	Rate (Plasma Neem Oil EC/acre)	Spray Interval
All crops except Grapes	See Pests List, Disease: Fungal Foliar	1.0-1.5%	5 quarts	10-14 days
Grapes	Powdery Mildew, Stem Mildew, Sour Rot	1.0-1.5%	5 quarts	10-14 days from pre-bloom through veraison
	Botrytis			Spray at bloom, pre-bunch closure, veraison and 14 days after veraison

[Note: Texts in [] are optional language.]

CHEMIGATION INSTRUCTIONS

GENERAL CHEMIGATION REQUIREMENTS

Apply this product only through in-furrow or drip (trickle) irrigation & system(s). Do not apply this product through any other type of irrigation system. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place. A person knowledgeable of the chemigation system and responsible for its operation or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

FURROW CHEMIGATION REQUIREMENTS

Systems using a gravity flow pesticide dispensing system must meter the pesticide into the water at the head of the field and downstream of a hydraulic discontinuity such as a drop structure or weir box to decrease potential for water source contamination from back flow if water flow stops. Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:

- The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.
- The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

A supply tank is recommended for this product. If using a supply tank, dilute this product at the rate of 6 quarts per 100~200 gallons of water. Frequent agitation is necessary. Apply in the second half of the water application to deliver **Plasma Neem® Oil EC** to the soil pests.

[Note: Texts in [] are optional language.]

DRIP CHEMIGATION REQUIREMENTS

The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down. The system must contain functional inter-locking controls to automatically shut off the pesticide injection pump when the water pump motor stops. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected. Systems must use a metering pump such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

A supply tank is recommended for this product. If using a supply tank, dilute this product at the rate of 6 quarts per 100~200 gallons of water. Frequent agitation is necessary. Apply in the second half of the water application to deliver Plasma Neem® Oil EC to the soil pests.

USE SITES

CROP USES – Use **Plasma Neem® Oil EC** on the following crops and crop groupings:

VEGETABLES

Bulb Vegetable Crops (including but not limited to)

Garlic	Onion
Leek	Shallot

Cucurbit Crops (including but not limited to)

Casaba	Pumpkin
Chayote (fruit)	Squash, summer
Chinese waxgourd	(crookneck squash,
Cucumber	scallop squash, straightneck
Gherkin	squash, vegetable marrow,
Gourd, edible (Chinese okra)	zucchini)
<i>Momordica spp</i> (balsam	Squash, winter
apple, balsam pear,	(butternut squash, calabaza,
bitter pear, bitter melon)	hubbard squash, acorn

[Note: Texts in [] are optional language.]

Muskmelon (incl. hybrids) (cantaloupe, crenshaw melon, golden pershaw melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple melon)	squash, spaghetti squash) Watermelon (incl. hybrids)
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Fruiting Vegetable Crops (including but not limited to)

Eggplant	Pepino
Groundcherry	Tomatillo
Pepper (bell pepper, chili pepper, cooking pepper, pimento, sweet pepper)	Tomato

Leafy & Brassica (Cole) Vegetable Crops (including but not limited to)

Arugula	Dandelion
Broccoli	Endive
Broccoli raab	Fennel
Brussel sprouts	Greens
Chinese broccoli (Gai lon)	Kale
Cabbage (head, leaf)	Kohlrabi
Cassava (bitter, sweet)	Lettuce (head, leaf)
Celery	Mustard spinach
Chinese cabbage (Bok choy, Napa)	Mustard greens
Chinese Spinach (Amaranth, Tampala)	Parsley
Cauliflower	Purslane
Celery	Radicchio (red chicory)
Celtuce	Rape greens
Chervil	Rhubarb
Chrysanthemum	Spinach
Cilantro	Swiss chard
Collards	Turnip top
Corn salad	Watercress

[Note: Texts in [] are optional language.]

Cress

Legume Crops (including but not limited to)

Bean (sweet lupin, white lupin)	Chickpea (garbanzo bean)
Bean (field bean, kidney bean, lima bean, navy bean, pinto bean, runner bean, snap bean, tepary bean, wax bean)	Guar Jackbean Lablab bean Lentil Pea (dwarf pea, edible-pea pod, English pea, field pea, garden pea, green pea, snow pea, sugar snap pea)
Bean (adzuki bean, asparagus bean) blackeyed pea, Chinese long- bean, cowpea, mung bean, southern pea)	Pigeon pea Soybean Sword bean
Broad bean	

Root and Tuber Vegetable Crops (including but not limited to)

Artichokes	Parsnip
Beet (garden, sugar)	Potato
Cardone	Sweet potato
Carrot	Radish
Cassava (bitter, sweet)	Radish, oriental (daikon)
Celeriac (celery root)	Rutabaga
Chicory	Salsify
Dasheen (taro)	Turmeric
Ginger	Turnip
Ginseng	Yam
Horseradish	Yam bean

SMALL FRUIT AND BERRY CROPS (including but not limited to)

Blackberry (incl. hybrids) (bingleberry, boysenberry, dewberry, darrowberry,	Elderberry Gooseberry Grape
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[Note: Texts in [] are optional language.]

youngberry)	Huckleberry
Blueberry	Loganberry
Cranberry	Raspberry (black, red)
Currant	Strawberry

CITRUS AND TROPICAL FRUIT CROPS (including but not limited to)

Avocado	Lime
Banana	Loquats
Calamondin	Lychee
Cherimoya	Mango
Citrus citron	Mandarin
Citrus hybrids (chironja, tangelo, tangor)	Satsuma mandarin
Coconut	Olive
Date	Orange, sour
Feijoa	Orange, sweet
Fig	Papaya
Grapefruit	Passion fruit
Guava	Pineapple
Jujube	Plantain
Kiwifruit	Pomegranate
Kumquat	Pummelo
Lemon	Quince
	Tangerine

POME AND STONE FRUIT CROPS (including but not limited to)

Apple	Pear
Apricot	Pear, oriental
Cherry, sweet	Plum
Cherry, tart	Plum, Chickasaw
Crabapple	Plum, Damson
Loquat	Plum, Japanese
Mayhaw	Plumcot
Nectarine	Prune
Peach	Quince

TREE NUT CROPS (including but not limited to)

Almond	Chestnut
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[Note: Texts in [] are optional language.]

Beech nut	Hickory nut
Brazil nut	Macadamia nut
Butternut	Pecan
Cashew nut	Pistachio
Filbert	

HERBS AND SPICE CROPS (including but not limited to)

Allspice	Lovage (leaf, seed)
Anise	Marigold
Balm	Marjoram
Basil	Mint
Borage	Mustard (seed)
Chamomile	Nasturtium
Caraway	Mutmeg
Cardamom	Parsley
Catnip	Pennroyal
Celery	Pepper (black, white)
Chervil (dried)	Peppermint
Chives	Poppy
Cinnamon	Rosemary
Clove buds	Rue
Coriander	Saffron
Cilantro (leaf, seed)	Sage
Cumin	Savory (summer, winter)
Curry leaf	Spearmint
Dandelion	Sweet bay
Dill	Tarragon
Fennel	Thyme
Lavender	Wintergreen
Lemongrass	

CEREAL GRAIN CROPS (including but not limited to)

Barley	Rice
Buckwheat	Rye
Corn	Sorghum (milo)
Millet, pearl	Teosinte
Millet, proso	Triticale
Oats	Wheat

[Note: Texts in [] are optional language.]

Popcorn

Wild rice

FORAGE CROPS (including but not limited to)

Alfalfa	Sainfoin
Bean, velvet	Trefoil
Clover	Vetch
Lespedeza	Vetch, crown
Lupin	Vetch, milk

MISCELLANEOUS CROPS (including but not limited to)

Acerola	Peanut
Canola	Quenepa
Coffee	Safflower
Cotton	Seagrape
Hops	Sesame
Jicama	Soursup (Quanabanas)
Jojoba	Star apple
Kinep	Sugarcane
Mushroom	Sunflower
Nispero	Tobacco
Okra	

OTHER PLANTS (including but not limited to)

Ornamentals	Fencerows
(Cuphea, Daylilly (bulb)	Nurseries
Fritillaria (bulb), Hosta	Turf
elegans, Lily (bulb),	(golf courses, parks,
Meadowfoam, Milkweed)	other grass areas)

PESTS: INSECTS, MITES, NEMATODES, THRIPS and DISEASES

Use to control the following pests:

<i>Insects (Foliar)</i>	
<i>Aphids</i>	<i>Cotton Aphid, Cowpea Aphid, Mustard Aphid, Okra Aphid, Pea Aphid, Green Peach Aphid, Potato Aphid, Rice Aphid</i>
<i>Beetles</i>	<i>Been Leaf Beetle, Brinjal (Egg Plant) Spotted Leaf Beetle, Chick Pea Beetle, Cow Pea Beetle, Colorado Potato Beetle, Corn Beetle, Cowpea Beetle, Cucumber Beetle, Flea Beetle, Japanese Beetle, Mexican Bean Beetle, Potato Flea Beetle, Radish Flea Beetle, Red</i>

[Note: Texts in [] are optional language.]

	<i>Pumpkin Beetle, Spotted Cucumber Beetle, Spotted Leaf Beetle, Soybean Japanese Beetle</i>
<i>Caterpillars, Moths</i>	<i>Armyworm, Alfalfa Worm, Beet Armyworm, Borers, Black Headed Caterpillar, Budworm, Cabbage Caterpillar, Cabbage Looper, Cotton Bollworm, Corn Earworm, Corn Rootworm, Cutworm, Fruitworm, Hornworm Leafroller, Leaf Perforator, Ear Cutting Caterpillar, Pickle Worm, Tobacco budworm, Tobacco Caterpillar, Webworm, Yellow Hairy Caterpillar, Diamondback Moth, Grape Berry Moth, Gypsy Moth</i>
<i>Flies, Gnats, Midges</i>	<i>Fruit Fly, Gnat, Fungus Gnat, Brassica Pod Midge</i>
<i>Grasshoppers, Leafhoppers</i>	<i>Brown Plant Hopper, Carolina Grasshopper, Leafhopper, Potato Leafhopper, Rice Brown Plant Hopper, Rice Grasshopper, Rice Green Leafhopper, Grape Leafhopper, Sharpshooter</i>
<i>Leafminers</i>	<i>Leafminers of Ornamental Plants, Citrus Leafminer, Tomato Leafminer, Vegetable Leafminer</i>
<i>Mealy Bugs, Scales</i>	<i>Citrus Mealy Bug, Mealy Bugs of Ornamental Plants and Grapes California Red Scale, Coffee Green Scale, San Jose Scale, Soft Scale, Yellow Scale</i>
<i>Plant Bugs, Lygus</i>	<i>Phylloxera, Spittle Bug, Stink Bug, Tomato Stink Bug</i>
<i>Psyllids</i>	<i>Asian Citrus Psyllid, Pear Psyllid, Potato Psyllid</i>
<i>Weevils</i>	<i>Black Vine Weevil, Boll Weevil, Pepper Weevil</i>
<i>Whiteflies</i>	<i>Cabbage Whitefly, Cotton Whitefly, Sugarcane Whitefly, Banded Wing Whitefly, Citrus Whitefly, Silverleaf Whitefly, Greenhouse Whitefly</i>
<i>Insect (Soil)</i>	
<i>Grubs, Wireworms, Maggots</i>	<i>Field Wireworm, Wheat Wireworm, Lygus Bug Maggots, Onion Maggot</i>
<i>Thrips</i>	
<i>Thrips</i>	<i>Avocado Thrip, Flower Thrip, Onion Thrip, Peanut Thrips, Grape Thrips, Tobacco Thrip, Western Flower Thrip</i>
<i>Mites</i>	
<i>Mites</i>	<i>Spider Mites, Two-Spotted Spider Mites, Pacific Spider Mites</i>
<i>Nematodes (Soil)</i>	
<i>Nematodes</i>	<i>Dragger Nematode, Golden Nematode, Lance Nematode, Lesion Nematode, Reniform Nematode, Root Knot Nematodes, Sting Nematodes, Soybean Cyst Nematodes*</i>
<i>Diseases</i>	
<i>Fungal; Foliar</i>	<i>Alternaria, Anthracnose, Blight (early, late, leaf), Botrytis, Mildew (Powdery, Downey), Stem Mildew, Molds, Rusts, Scab, Southern Blight (Sclerotium rolfsii), Sour Rot on Grapes</i>
<i>(Fungal; Soil)</i>	<i>Fusarium Oxysporum, Pythium, Rhizoctonia Solani</i>

[* Except in California]

[Note: Texts in [] are optional language.]

STORAGE AND DISPOSAL

DO NOT contaminate water, food or feed by pesticide storage or disposal.

PESTICIDE STORAGE: Do not store this product above 104°F or below 20°F for extended periods of time. Keep containers tightly closed and in original containers when not in use. Do not store exposed to ultraviolet light (sunlight) or moisture. Neem oil clouds and solidifies at temperatures below 59°F. If oil has solidified, gently thaw by exposing to temperatures over 80°F. Store in such a manner to prevent cross contamination with other pesticides, fertilizers, food and feed. Store in original container and out of the reach of children, preferably in a locked storage area. Keep container closed when not in use.

PESTICIDAL DISPOSAL: To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

CONTAINER DISPOSAL: Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available.

5-Gallon or Smaller Containers: Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Containers Larger than 5 Gallons: Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

IMPORTANT: READ BEFORE USE

By using this product, user or buyer accepts the following Conditions, Disclaimer of Warranties and Limitations of Liability.

CONDITIONS: The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Seller. All such risks shall be assumed by the user or buyer.

DISCLAIMER OF WARRANTIES: To the extent consistent with applicable law, Seller makes no other warranties, express or implied, of merchantability or of fitness for a purpose or otherwise, that extend beyond the statements made on this label. No agent of Seller is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. To the extent consistent with applicable law,

[Note: Texts in [] are optional language.]

Seller disclaims any liability whatsoever for special, incidental or consequential damages resulting from the use or handling of this product.

LIMITATIONS OF LIABILITY: To the extent consistent with applicable law, the exclusive remedy of the user or buyer for any and all losses, injuries or damages resulting from the use or handling of this product, whether in contract, warranty, tort, negligence, strict liability or otherwise, shall not exceed the purchase price paid or at Seller election, the replacement of product.

[Terramera, TerraNeem and Plamsa Neem are trademarks of Terramera, Inc.]

[Note: Texts in [] are optional language.]

[Optional Marketing Claims]

- [Use] The Power of Neem
- [Cold Pressed]] Neem Oil
- Derived From Neem
- Plant-based [biopesticide] [spray]
- Botanical insecticide and fungicide
- Non-toxic [mode of] action
- Protect your plants from insects and diseases
- [4-in-1,] multi-purpose product – fungicide, insecticide, miticide and nematocide*
[*for use on listed pest and crops]
- [For] Use as part of an Integrated Pest Management [program][strategy]
- Plasma Neem Oil EC is an effective biological fungicide, insecticide, miticide and nematocide for organic gardening use on vegetables, tree fruits, nuts and vines, citrus, ornamental flowers, shrubs and trees, grass lawns, and houseplants.
- For use on vegetables, [fruits,] [nuts,] [vines,] [citrus,] [ornamental plants,] [shrubs and trees,] [grass lawns,] [houseplants]
- [Also] controls aphids, [beetles,] [stink bugs,] [caterpillars,] [leafhoppers,] [leafminers,] [whiteflies,] [mealy bugs,] [midges,] [spider mites,] [nematodes,] [weevils,] [scales,] [and] [&] [thrips] [other listed insects and nematodes]
- Controls powdery mildew, botrytis, [stem mildew,] [and] [&] [sour rot]
- Use for the prevention and control of powdery mildew, botrytis, stem mildew and others as listed on label.
- Can be applied up to day of harvest [as a [4 in 1,] multi-purpose product [– fungicide, insecticide, miticide and nematocide *]] [*for use on listed pest and crops]
- For use in and around home and home garden
- Peel Here for Directions & Precautions
- Concentrate
- [12 fl. oz. concentrate] [this bottle] makes up to 16 gallons
- [16 fl. oz. concentrate] [this bottle] makes up to 21 gallons
- [24 fl. oz. concentrate] [this bottle] makes up to 32 gallons
- [32 fl. oz. concentrate] [this bottle] makes up to 43 gallons
- [128 fl. oz. concentrate] [this jug] makes up to 172 gallons
- [320 fl. oz. concentrate] [this jug] makes up to 430 gallons

[Note: Texts in [] are optional language.]

Plasma Neem® Oil EC (EPA Reg. No. 88760-5)

Sublabel B: Residential Use

Plasma Neem® Oil EC

[Biological] Insecticide [/Fungicide] [/Nematicide] [/Miticide]

[Anti-Feedant, Insect Repellent, Insect Growth Regulator, Fungal Growth Inhibition]

*For Use on Listed Crops
including vegetables, fruits, citrus, nuts, [and] ornamental plants, lawns and other plants*



For Organic Gardening



Active Ingredient:

Cold Pressed Neem Oil..... 84.9%

Other Ingredients..... 15.1%

Total 100.0%

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

READ ALL DIRECTIONS BEFORE USING THIS PRODUCT

Shake Well Before Use

[See back label for additional precautionary statements, directions for use, storage and disposal statements, and warranty.]

NET CONTENTS: 3 FL. OZ. to 5 GALLONS

EPA Reg. No. 88760-5
EPA Est. No. 49292-WA-001

Batch No.

Manufactured by:
Terramera, Inc.
6920 Salashan Pkwy D-109
Ferndale, WA 98248

[Note: Texts in [] are optional language.]

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

ENVIRONMENTAL HAZARDS

To protect the environment, do not allow pesticide to enter or run off into storm drains, drainage ditches, gutters or surface waters. Applying this product in calm weather when rain is not predicted for the next 24 hours will help to ensure that wind or rain does not blow or wash pesticide off the treatment area. Rinsing application equipment over the treated area will help avoid run off to water bodies or drainage systems.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

GENERAL INFORMATION

Plasma Neem® Oil EC controls listed insects on contact or by ingestion. The product acts on insects by way of repellence, anti-feedant action and interference with the molting process. Plasma Neem® Oil EC controls listed diseases by inhibiting mycelial fungal growth. The efficacy of this product is dependent on weather conditions, intensity of pest population, area of application, and physical stages of pests and crops.

Do not store this product above 104°F or below 20°F for extended periods of time. Keep containers tightly closed and in original containers when not in use. Do not store exposed to ultraviolet light (sunlight) or moisture.

THAWING (MELTING) INSTRUCTIONS

Neem oil clouds and solidifies at temperatures below 59°F. Thaw (melt) solidified product by standing bottle in warm water. Make sure cap is tightly closed. Or set out in temps over 80°F. Avoid direct exposure to temperatures over 104°F.

MIXING INSTRUCTIONS

Plasma Neem® Oil EC contains cold pressed Neem Oil and requires only water for the appropriate use dilution. Add **Plasma Neem® Oil EC** to a mixing tank or spray bottle with a little water and agitate thoroughly. For optimal mixing, ensure water temperature is above 45°F. Then add remaining water to the spray tank or spray bottle with continuous agitation. Agitate continuously while spraying. Non-uniform dilution can cause damage to plant or result in lowered effectiveness.

Crop Uses: **Plasma Neem® Oil EC** may be used on bulbs, cucurbits, fruiting vegetables, leafy and brassica (cole) vegetables, legumes, root and tuber vegetables, small fruit and berries, citrus and tropical fruits, pome and stone fruits, tree nuts, herbs and spices, and grass, lawn and ornamentals.

Use Rates: Apply **Plasma Neem® Oil EC** at 0.5 – 1.5% in sufficient amounts of water to achieve complete coverage. Use at 1 – 2% when applying on trees or as soil treatment. **Plasma Neem® Oil EC** is most effective when applied before insects or eggs are present in large numbers. Repeat application every 7 to 14 days.

[Note: Texts in [] are optional language.]

Spray Directions: Apply **Plasma Neem® Oil EC** as a foliar spray or as soil drench to control listed pests. Apply as a soil drench to control the listed soil borne pests and their larvae. When applied as a soil drench, avoid excessive run off. When using as a foliar application, ensure thorough coverage of plant surfaces, but avoid pooling and run off.

Avoid spraying under conditions of high humidity and high temperature (>90°F). To avoid potential leaf burn, apply the product in early morning or late evening. Test the product on a small portion of plants for compatibility before treating the entire plants.

Instructions for 1-Gallon Sprayer

Pests	Fluid Ounces (oz) Plasma Neem Oil EC per Gallon Water	Tablespoons (Tbsp) Plasma Neem Oil EC per Gallon Water
Insects – most conditions	1 fl. oz	2 Tbsp
Insects – heavy infestation	1½ fl. oz	3 Tbsp
Disease control	1½ fl. oz	3 Tbsp
Trees only (Insects and Diseases) and Soil Treatments	2 fl. oz	4 Tbsp

Instructions for 32 oz. (1 Qt.) Spray Bottle

Pests	Teaspoons (tsp) or Tablespoon (tbsp) per 32 oz. (1 Qt) Water
Insects – most conditions	1½ tsp
Insects – heavy infestation	2½ tsp
Disease control	2½ tsp
Trees only (Insects and Diseases) and Soil Treatments	1 tbsp

PESTS: Use Plasma Neem® Oil EC to control the following insects and diseases:

Aphids	Cotton Aphid, Cowpea Aphid, Mustard Aphid, Okra Aphid, Pea Aphid, Green Peach Aphid, Potato Aphid, Rice Aphid
Beetles	Been Leaf Beetle, Brinjal (Egg Plant) Spotted Leaf Beetle, Chick Pea Beetle, Cow Pea Beetle, Colorado Potato Beetle, Cucumber Beetle, Flea Beetle, Japanese Beetle, Mexican Bean Beetle, Potato Flea Beetle, Radish Flea Beetle, Red Pumpkin Beetle, Spotted Cucumber Beetle, Spotted Leaf Beetle, Soybean Japanese Beetle
Caterpillars, Moths	Armyworm, Alfalfa Worm, Beet Armyworm, Borers, Black Headed Caterpillar, Budworm, Cabbage Caterpillar, Cabbage Looper,

[Note: Texts in [] are optional language.]

	Cotton Bollworm, Corn Earworm, Corn Rootworm, Cutworm, Ear Cutting Caterpillar, Fruitworm, Hornworm Leafroller, Leaf Perforator, Ear Cutting Caterpillar, Pickle Worm, Tobacco budworm, Tobacco Caterpillar, Webworm, Yellow Hairy Caterpillar, Diamondback Moth, Grape Berry Moth, Gypsy Moth
<i>Flies, Gnats, Midges</i>	<i>Fruit Fly, Gnat, Fungus Gnat, Brassica Pod Midge</i>
Leafhoppers	Brown Plant Hopper, Carolina Grasshopper, Leafhopper, Potato Leafhopper, Rice Brown Plant Hopper, Rice Grasshopper, Rice Green Leafhopper, Grape Leafhopper, Sharpshooter
Leafminers	Leafminers of Ornamental Plants, Citrus Leafminer, Tomato Leafminer, Vegetable Leafminer
Mealy Bugs, Scales	Mealy Bugs of Ornamental Plants and Grapes, Citrus Mealy Bug, Mealy Bugs of Ornamental Plants and Grapes California Red Scale, Coffee Green Scale, San Jose Scale, Soft Scale, Yellow Scale
Midges	Brassica Pod Midge
Mites	Spider Mites
Nematodes (Soil)	Dragger Nematode, Golden Nematode, Lance Nematode, Lesion Nematode, Reniform Nematode, Root knot nematodes, Sting Nematode,
<i>Plant Bugs, Lygus</i>	<i>Phylloxera, Spittle Bug, Stink Bug, Tomato Stink Bug</i>
Scales	California Red Scale, Yellow Scale, Coffee Green Scale
<i>Psyllids</i>	<i>Asian Citrus Psyllid, Pear Psyllid, Potato Psyllid</i>
Thrips	Avocado Thrip, Flower Thrip, Onion Thrip, Peanut Thrips, Grape Thrips, Tobacco Thrip, Western Flower Thrip
Weevils	Black Vine Weevil, Boll Weevil, Pepper Weevil
Whiteflies	Cotton Whitefly, Sugarcane Whitefly, Banded Wing Whitefly, Citrus Whitefly
<i>Diseases Fungal; Foliar</i>	<i>Alternaria, Anthracnose, Blight (early, late, leaf), Botrytis, Mildew (Powdery, Downey), Stem Mildew, Molds, Rusts, Scab, Southern Blight (Sclerotium rolfsii), Sour Rot on Grapes</i>
<i>Diseases fungal; Soil</i>	<i>Fusarium Oxysporum, Pythium, Rhizoctonia Solani</i>

STORAGE AND DISPOSAL

Store in a cool dry place out of reach of children and pets and away from direct sunlight, windows, flames and other sources of heat or ignitions. Nonrefillable container. Do not reuse or refill this container. If empty: Place in trash or offer for recycling if available. If partly filled: Call your local solid waste agency for disposal instructions. Never place unused product down any indoor or outdoor drain.

NOTICE:

[Note: Texts in [] are optional language.]

Terramera, Inc. warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this warranty does not extend to the use of the product contrary to label instructions or under conditions not reasonably foreseeable to or beyond the control of Seller or Terramera, Inc., and, (2) Buyer and User assume the risk of any such use. TO THE EXTENT PERMITTED BY APPLICABLE LAW, TERRAMERA, INC. MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.

[Note: Texts in [] are optional language.]

[Optional Marketing Claims]

- [Use] The Power of Neem
- [Cold Pressed]] Neem Oil
- Derived From Neem
- Plant-based [biopesticide] [spray]
- Botanical insecticide and fungicide
- Non-toxic [mode of] action
- Protect your plants from insects and diseases
- [4-in-1,] multi-purpose product – fungicide, insecticide, miticide and nematocide*
[*for use on listed pest and crops]
- [For] Use as part of an Integrated Pest Management [program][strategy]
- Plasma Neem Oil EC is an effective biological fungicide, insecticide, miticide and nematocide for organic gardening use on vegetables, tree fruits, nuts and vines, citrus, ornamental flowers, shrubs and trees, grass lawns, and houseplants.
- For use on vegetables, [fruits,] [nuts,] [vines,] [citrus,] [ornamental plants,] [shrubs and trees,] [grass lawns,] [houseplants]
- [Also] controls aphids, [beetles,] [stink bugs,] [caterpillars,] [leafhoppers,] [leafminers,] [whiteflies,] [mealy bugs,] [midges,] [spider mites,] [nematodes,] [weevils,] [scales,] [and] [&] [thrips] [other listed insects and nematodes]
- Controls powdery mildew, botrytis, [stem mildew,] [and] [&] [sour rot]
- Use for the prevention and control of powdery mildew, botrytis, stem mildew and others as listed on label.
- Can be applied up to day of harvest [as a [4 in 1,] multi-purpose product [– fungicide, insecticide, miticide and nematocide *]] [*for use on listed pest and crops]
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- Peel Here for Directions & Precautions
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